PANEL 4 – INTELLIGENT MARINE TRANSPORTATION SYSTEM

MODERATOR
CAPT Jon Helmick, U.S. Merchant Marine Academy

COORDINATOR
Alex Landsburg, Maritime Administration

CHALLENGE SPEAKER
Dr. Ashish Sen, Bureau of Transportation Statistics

PANELISTS
Anne Aylward, EG&G Technical Services at the Volpe Center

Henry Marcus, Massachusetts Institute of Technology

Duncan Wright, CSX Lines

Sandra Borden, Project Manager of the U.S. Coast Guard's Ports and Waterways Safety System

SUMMARY OF PANEL PRESENTATIONS / DISCUSSION
The distinguished panelists that comprised Panel 4 addressed issues related to the development, application, and value added by Intelligent Transportation System (ITS) approaches, concepts, and technologies in the specific context of the Marine Transportation System.

The moderator, CAPT Jon Helmick, began the session by delineating the dimensions of world general cargo trade, the magnitude of containerization, the current challenges of ocean carrier and liner port operation, the needs of commercial and military shippers, and the new imperatives of security that together increasingly drive the adoption of ITS in the MTS.

Dr. Ashish Sen
The challenge speaker was Dr. Ashish Sen who discussed how the events of September 11 gave new meaning for decision-makers to know as much as possible about the marine transportation system as they review and improve security measures. Timely, accurate, and reliable data are critical for decisions on maritime security, just as they are for all other aspects of the transportation system. Dr. Sen then outlined the Bureau of Transportation Statistics (BTS) responsibilities for improving the quality of transportation data, both within the Department of Transportation (DOT) and throughout the transportation community. It is the BTS's firm belief that making better data available to decision-makers will result in more informed decisions. Consequently, they are actively pursuing their mission of becoming the knowledge base for the MTS. They intend to work as partners with the entire maritime community (port operators, maritime agencies, and all levels of government as well as the transporter and shippers in the private sector) to identify the data needs of the 21st century. In these partnerships, they will not only identify data gaps but also collect essential data that are not being collected today and disseminate them widely. By working together, the BTS and their partners can produce higher quality data that can lead to a more secure and productive transportation system. In doing so, they will make

transportation better and improve our lives as well as those of future generations.

Anne Aylward

Anne Aylward of EG&G Technical Services at the Volpe National Transportation Systems Center, focused on lessons learned from experience in the evolution of landside ITS that might have application for the implementation of ITS in the port and maritime realm. She observed that although ITS development has encompassed the idea of intermodal transportation, this consideration has largely excluded marine transportation. Ms. Aylward suggested the need for dissolution of modal and agency "stovepipes" where ITS issues are concerned. In her view, problems in the advancement of ITS are more institutional than technological. Finally, she underscored the need for a coordinated national policy and a predictable funding stream for the development of information infrastructure.

Dr. Henry Marcus

Dr. Henry Marcus of the Massachusetts Institute of Technology discussed intermodal freight container and equipment tagging and tracking. He considered the costs and benefits associated with the use of various technologies that provide in-transit visibility within the supply chain, such as Radio Frequency (RF) and GPS tags. Emphasizing benefits of increased asset utilization, service quality, improved cargo security, and enhanced cargo monitoring capability, Dr. Marcus evaluated key economic issues associated with tagging and tracking devices. Dr. Marcus commented on the interoperability challenge, whereby various users deploy different technologies that are ultimately incompatible. Dr. Marcus concluded his presentation by predicting greater use of automated identification technology in the future, and by noting the need for more research on this topic.

Sandra Borden

Sandra Borden, Project Manager for the U.S. Coast Guard Port and Waterways Safety System, explained the essential mechanics and objectives of Automatic Identification Systems (AIS). She noted that AIS was developed as a means of improving marine collision avoidance, but that the technology has important implications for Vessel Traffic Services (VTS) and maritime security. Ms. Borden discussed the complexity of transponders in general and summarized problems related to a shortage of VHF frequencies to be used for communications of AIS transponder information. She described the process of securing international adoption of proposed U.S. transponder technical standards, and noted the Coast Guard's request to the International Maritime Organization (IMO) for acceleration of the schedule for implementation of worldwide carriage of AIS devices aboard ship. She closed her briefing with the assessment that AIS will prove beneficial for trade, transportation safety, and security.

Duncan Wright

The final panelist, Duncan Wright of CSX Lines, Inc., began by describing the typically fragmented nature of liner service company databases and the operational difficulties that derive from the existence of separate data collection and storage systems for individual business functions. He then discussed

the successful effort by his firm to integrate its disparate databases. Mr. Wright detailed the commercial benefits of this integration, including facilitation of Just-In-Time supply chains, inventory cost reduction, and improved productivity. He emphasized the fact that security is also greatly enhanced by the capability to acquire and process accurate information on the specifics of containerized cargo shipments and those who originate them. Mr. Wright explained the business rules engine that is embedded in the CSX system, which generates alerts based on correlation of such variables as container weights versus manifested contents, shipment origin/destination versus a shipper's historical patterns, and similar data elements. He concluded that much of the information technology being used in global intermodal transportation can be employed for security purposes.

A lively question and answer period followed the presentations, in which the panelists addressed inquiries from the audience concerning specific technologies, uses of information, and examples of ITS applications in the port and maritime environment.